

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A manufacturing method for a display which uses an organic EL element in a display portion, comprising the steps of :

preparing a circuit substrate with microstructures made with drive circuits for said organic EL element set at positions corresponding to pixels, a protective film made of an insulating material covering the microstructures, the protective film having through holes, and with wiring formed on the surface connecting to the microstructures through the through holes;

separately preparing a transparent substrate with a transparent electrode layer common with the pixels laminated on the surface, forming an insulating layer with openings therein separated by banks of insulating material on the transparent electrode layer, and forming an emissive layer containing an organic EL layer and a cathode layer in the openings in the insulating layer at positions corresponding to said pixels, the cathode layer having a protruding portion protruding from each of the openings, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks; and

then sticking together said circuit substrate and said transparent substrate with the side on which said wiring of said circuit substrate is formed and the side on which said cathode layer of said transparent substrate is formed facing towards the inside.

2. (Original) The manufacturing method for an organic EL display according to claim 1, the sticking together of said circuit substrate and said transparent substrate being performed by inserting an anisotropic conductive paste or an anisotropic conductive film therebetween.

3. (Original) The manufacturing method for an organic EL display according to claim 1, involving respectively preparing a roll of said circuit substrate, and a roll of said transparent substrate, and then unrolling said circuit substrate and said transparent substrate from these rolls while inserting an anisotropic conductive film therebetween, and pressing with a pressing roller from front and rear surfaces to thereby stick together said circuit substrate and said transparent substrate.

4. (Original) The manufacturing method for an organic EL display according to claim 3, after sticking together said circuit substrate and said transparent substrate, the stuck together product being cut to an optional length.

5. (Currently Amended) An organic EL display which uses an organic EL element in a display portion, microstructures made with drive circuits for said organic EL element being set at positions corresponding to pixels of a first substrate, a protective film made of an insulating material with through holes covering the microstructures, wiring passing through the through holes to connect to the microstructures, and a second substrate comprising: a plurality of emissive layer portions and a plurality of

cathodes formed in openings in an insulating material; and banks of the an-insulating material separating the plurality of emissive layer portions, each of the cathodes having a protruding portion protruding from each of the openings, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks, and these first substrate and second substrate being stuck together.

6. (Currently Amended) An organic EL display which uses an organic EL element in a display portion, a circuit substrate with microstructures made with drive circuits for the organic EL element set at positions corresponding to pixels, a protective film made of an insulating material covering the microstructures, the protective film having through holes, and with wiring formed on the surface connecting to the microstructures through the through holes, and a transparent substrate with a transparent electrode layer common with the pixels laminated on the surface, and an array of active areas, each area having an emissive layer containing the organic EL layer and a cathode layer laminated on the upper surface of said transparent electrode layer at a position corresponding to said pixels, said active areas being separated by banks of insulating material on the transparent electrode layer, the cathode layer having a protruding portion protruding from each of the active areas, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks; and the circuit substrate and transparent substrate being stuck together with the side on which said

wiring of said circuit substrate is formed and the side on which said cathode layer of said transparent substrate is formed facing towards the inside.

7. (Original) The organic EL display according to claim 6, said circuit substrate and said transparent substrate being stuck together by inserting an anisotropic conductive paste or an anisotropic conductive film therebetween.

8. (Currently Amended) A manufacturing method for an electro-optic device which uses electro-optic elements in a display portion, comprising the steps of:

preparing a first substrate with microstructures formed with drive circuits for said electro-optic elements set at positions corresponding to pixels, a protective film made of an insulating material with through holes covering the microstructures, wiring passing through the through holes to connect to the microstructures;

preparing a second substrate with said electro-optic elements and a plurality of cathodes formed in openings in an insulating material at positions corresponding to said pixels, said electro-optic elements being separated by banks of the insulating material, each of the cathodes having a protruding portion protruding from each of the openings, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks; and

then sticking together said first substrate and said second substrate with the side of said first substrate on which said drive circuits are formed and the side of said second substrate on which said electro-optic elements are formed facing towards the inside.

9. (Currently Amended) An electro-optic device which uses electro-optic elements in a display portion, microstructures made with drive circuits for said electro-optic elements being set at positions corresponding to pixels of a first substrate, a protective film made of an insulating material with through holes covering the microstructures, wiring passing through the through holes for connecting to the microstructures, and a second substrate having: a plurality of emissive layer portions and a plurality of cathodes formed in openings in an insulating material; and banks of the insulating material separating the openings, each of the cathodes having a protruding portion protruding from each of the openings, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks, and an insulating material separating the plurality of electro-optic layer portions, and said first substrate and second substrate being stuck together.

10. (Original) An electronic device provided with the electro-optic device according to claim 9.

11. (Currently Amended) A method of manufacturing a display using an organic EL element in a display portion comprising the steps of:

preparing a circuit substrate with drive circuits for the organic EL element set at positions corresponding to pixels;

covering the drive circuits with a protective film made of an insulating material, the protective film having a plurality of through holes;

connecting a plurality of wires to the drive circuits by passing the plurality of wires through the plurality of through holes;

preparing a transparent substrate, the transparent substrate including:

a transparent electrode layer common with the pixels laminated on the surface;

an insulating layer on the surface, said insulating layer having openings therein and banks of an insulating material separating the openings, each opening containing an emissive layer containing an organic EL layer and a cathode layer laminated on the upper surface of the transparent electrode layer at a position corresponding to the pixels, the cathode layer having a protruding portion protruding from each of the openings, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks; and

joining the circuit substrate to the transparent substrate by connecting the plurality of wires of the circuit substrate to the cathode layer of the transparent substrate.

12. (Previously Presented) The method of Claim 11, wherein the drive circuits are included in microstructures.

13. (Previously Presented) The method of claim 11, wherein joining the circuit substrate to the transparent substrate further includes the step of inserting an anisotropic conductive paste between the circuit substrate and the transparent substrate.

14. (Previously Presented) The method of Claim 11, wherein joining the circuit substrate to the transparent substrate further includes the step of inserting an anisotropic conductive film between the circuit substrate and transparent substrate.

15. (Previously Presented) The method of Claim 11 further comprising the steps of:

rolling the circuit substrate into a circuit substrate roll;

rolling the transparent substrate into a transparent substrate roll;

unrolling the circuit substrate and the transparent substrate from the circuit and transparent substrate rolls;

inserting an anisotropic conductive film between the circuit substrate and the transparent substrate; and

pressing the circuit substrate and the transparent substrate together with a pressing roller, the pressing roller pressing the circuit substrate and the transparent substrate from front to rear.

16. (Previously Presented) The method of Claim 15 further including the step of cutting the circuit substrate and the transparent substrate to an optional length.

17. (Currently Amended) An organic EL display using an organic EL element in a display portion comprising:

- drive circuits formed on a first substrate for the organic EL element being set at positions corresponding to pixels;
- a protective film formed from an insulating material with a plurality of through holes covering the drive circuits;
- a plurality of wires passing through the plurality of through holes with a first end connecting to the drive circuits; ~~and~~
- an emissive layer containing a plurality of organic EL portions; and,
- an insulating material layer containing: openings in which the organic EL portions and a plurality of cathodes are formed at positions corresponding to the pixels; and banks of an insulating material separating the plurality of organic EL portions, each of the cathodes having a protruding portion protruding from each of the openings, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks, and

the first substrate and second substrate being joined together.

18. (Previously Presented) The organic EL display of Claim 17 further comprising a plurality of microstructures, the drive circuits being included therein.

19. (Currently Amended) An organic EL display which uses an organic EL element in a display portion comprising:

a circuit substrate having a plurality of drive circuits for the organic EL element set at positions corresponding to a plurality of pixels;

a protective film made of an insulating material covering the drive circuits, the protective film having a plurality of through holes;

a plurality of wires connecting to the microstructures through the plurality of through holes;

a transparent substrate including:

a transparent electrode layer on a surface of the transparent substrate; and

an insulating layer on the transparent electrode layer, said insulating layer having an array of openings therein and banks of an insulating material separating the openings, each opening containing an emissive layer containing the organic EL element and a cathode layer laminated on the upper surface of the transparent electrode layer at a position corresponding to the pixels, the cathode layer having a protruding portion protruding from each of the openings, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks, the plurality of wiring of the circuit substrate joining with the cathode layer of the transparent substrate.

20. (Previously Presented) The organic EL display of Claim 19 further comprising a plurality of microstructures, the drive circuits being included therein.

21. (Previously Presented) The organic EL display of Claim 19 wherein joining the circuit substrate to the transparent substrate includes inserting an anisotropic conductive paste between the circuit substrate and the transparent substrate.

22. (Previously Presented) The organic EL display of Claim 19 wherein joining the circuit substrate to the transparent substrate includes inserting an anisotropic conductive film between the circuit substrate and the transparent substrate.

23. (Currently Amended) A manufacturing method for an electro-optic device using electro-optic elements in a display portion comprising the steps of:

preparing a first substrate having drive circuits for the electro-optic elements set at positions corresponding to pixels;

covering the drive circuits with a protective film made of an insulating material with a plurality of through holes;

passing a plurality of wires through the plurality of through holes to connect to the drive circuits;

preparing a second substrate with the electro-optic elements and a plurality of cathodes formed in openings in an insulating layer at positions corresponding to the pixels, the electro-optic elements being separated by banks of an insulating material, each of the cathodes having a protruding portion protruding from

each of the openings, in which a concave portion is formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks; and

joining the first substrate and the second substrate such that the drive circuits of the first substrate and the electro-optic elements of the second substrate are placed between the first and second substrate.

24. (Previously Presented) The manufacturing method of Claim 23 further comprising a plurality of microstructures, the drive circuits being included therein.

25. (Currently Amended) An electro-optic device that uses electro-optic elements in a display portion comprising:

a plurality of drive circuits for the electro-optic elements being set at positions corresponding to pixels of a first substrate;

a protective film made of an insulating material with a plurality of through holes covering the drive circuits;

a plurality of wires passing through the plurality of through holes for connecting to the drive circuits; and

an electro-optic layer containing the electro-optic elements and being formed in openings in an insulating layer on ~~at least one of the first substrate and a second substrate;~~

banks of an insulating material separating the openings; and

a cathode layer formed in each of the openings and having a protruding portion protruding from each of the openings, in which a concave portion is

formed on a surface of the protruding portion at an area corresponding to each of the pixels, a part of the protruding portion covering a part of the banks, with wherein the first substrate and second substrate are being joined together.

26. (Previously Presented) The electro-optic device of Claim 25 further comprising a plurality of microstructures, the drive circuits being included therein.

27. (Previously Presented) The electro-optic device of Claim 25 further comprising an electronic device.